

REMARKS

Drawings

The Examiner objected to the drawings under 37 CFR 1.83(a). Applicants advised the Examiner through a telephone call by the undersigned attorney that no drawings were submitted with this application. Subsequently, in a return message left in voicemail, the Examiner confirmed that no drawings had been submitted, but required a drawing to be submitted.

The original objection of the Examiner stated that a B-stageable underfill comprising a combination of two chemical compositions must be shown. Applicants are submitting a proposed drawing, Figure 1, showing an adhesive layer on a silicon wafer. The adhesive of applicants' invention is a combination of two adhesives blended together to be homogeneous. Consequently, it is not part of applicants' invention to depict two chemical compositions.

Applicants are also amending the specification to add new paragraph [0014] describing the drawing.

If the Examiner comes to the conclusion that the proposed drawing would not benefit the application, applicants request an Examiner's amendment to cancel the drawing and the amendment to the specification, or the issuance of another office action withdrawing the request for a drawing or identifying more specifically the drawing the Examiner believes would clarify the invention.

Rejection 35 USC §112

The Examiner rejected claims 1-5 and 7-11 as being indefinite because it is unclear how the first composition is a liquid and cured. Applicants are unsure of how to respond to this rejection in that none of the claims recite that the first composition is a liquid. The claims do recite that the curing temperatures of the first and second compositions are separated by a sufficient amount to allow the curing of the first composition before the second.

Rejection 35 USC §103

The Examiner rejected claims 1-5 and 7-11 as being unpatentable over Date *et al.* (US 2002/0084019) on the grounds that Date disclose a B-stageable underfill comprising a combination of two chemical compositions.

Applicants urge that their invention embodied in amended claims 1 and 7 is not obvious over Date and respectfully traverse on the following grounds.

Date disclose a two-pack adhesive for adhering an integrated circuit assembly to a mounting substrate. There is an acrylic portion, which cures by a redox polymerization, and an epoxy portion. The acrylic portion cures at room temperature, and in order to prevent premature cure, the acrylic portion contains the acrylic resin and either the reducing agent or the oxidizing agent, but not both, or it contains the reducing agent and the oxidizing agent, but not the acrylic resin. In this way, cure only begins when the two portions are brought into contact with each other. The notable distinction here is that the first cure occurs

spontaneously at room temperature, with a second cure following with the application of heat for the epoxy resin at 80°-100°C. (Paragraphs [0019], [0020], [0023], [0065], [0077], [0078]).

Applicants' invention in contrast relates to a B-stageable underfill applied to a silicon wafer, in which all the components of the total composition can be blended without an unwanted spontaneous curing. As now amended, applicants' claims recite that the first composition does not cure until heat is applied, and an even higher temperature is needed for curing the second composition.

There is no teaching or suggestion in Date to formulate an adhesive that can be used as an underfill as taught by applicants. For these reasons, applicants respectfully request the Examiner to remove the rejection and issue an allowance.

end of remarks



SERIAL NO. 10/020,638
INVENTOR: BOOAN MA

Figure 1

